



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,687	10/14/2003	Xianhai Chen	014116-008100US	7052

20350 7590 05/01/2007  
TOWNSEND AND TOWNSEND AND CREW, LLP  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER
----------

WARD, JESSICA LEE

ART UNIT	PAPER NUMBER
----------	--------------

1733

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	05/01/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/685,687

Applicant(s)

CHEN ET AL.

Examiner

Jessica L. Ward

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2007.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***RCE***

1. The request filed on 1/26/07 for a RCE under 37 CFR 1.114 based on parent Application No. 10/685,687 is acceptable and a RCE has been established. An action on the RCE follows.
2. The rejection of claim 1 under 35 USC 103(a) as being unpatentable over Holman et al. in view of Bryan and further in view of the collective teachings of Bryan, Zuchowski and Haas et al., as set forth in the previous action, has been withdrawn in light of Applicant's arguments presented on p. 4.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henley (US 5465052) in view of the collective teachings of Konuma et al. (US 5357356), Knoesen et al. (US 6047095) and Takizawa et al. (US 5471331) and further in view of Bryan (US 6151153, of record).

With respect to claim 1, Henley discloses an electro-optical sensor (2) (abstract) comprising a glass substrate (G) having an optically smooth top surface and bottom surface, a transparent electrode (2a) on the top surface of the glass substrate, a composition of electro-optic (liquid crystal, i.e., PDLC) sensor material (8) as a layer over the electrode, and a dielectric mirror layer (9) formed or bonded on the bottom surface of the sensor material (8) (Figure 2; column 3 lines 29-30; column 4, lines 10-45).

Art Unit: 1733

It is unclear as to whether the reference teaches coating the electrode on the glass substrate, coating the sensor material over the electrode without using a transfer substrate, applying a layer of adhesive over the sensor material, and applying a pellicle as a film bearing the dielectric mirror layer to the adhesive layer such that the dielectric mirror layer is substantially optically smooth against the sensor material.

It is well known and conventional in the electro-optical device art to coat the top surface of a glass substrate with an electrode and then coat an electro-optic material (liquid crystal, i.e., PDLC) over the electrode without using a transfer substrate, as taught by the collective teachings of Konuma (column 1, lines 8-11; column 7, lines 38-55; column 4, lines 56-59), Knoesen (column 1, lines 14-18; column 4, lines 35-37; column 5, lines 3-5; column 5, lines 25-26; column 6, lines 43-46) and Takizawa (column 4, lines 39-53; column 3, lines 7-9; column 3, lines 62-63; column 10, line 57 – column 11, line 3; column 12, lines 52-53). Coating is desirable because it simplifies the manufacturing process by eliminating the need to pre-form these layers and/or inject the electro-optic material between two substrates, which is a far more complicated process (see Takizawa at column 4, lines 2-53).

One reading Henley as a whole would have readily appreciated that using particular process steps to form/apply the various layers of the electro-optical sensor is of no concern to the invention. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to apply the electrode of Henley to the top surface of the glass substrate by coating and to apply the composition of the electro-optic (liquid crystal, i.e., PDLC) sensor material of Henley over the electrode by coating without using a transfer substrate because such is known in the electro-optical device art, as taught by the collective teachings of Konuma,

Art Unit: 1733

Knoesen and Takizawa, where coating simplifies the manufacturing process by eliminating the need to pre-form these layers and/or inject the electro-optic material between two substrates, which is a far more complicated process.

It is known in the art to make an electro-optical sensor by applying a pellicle as a film bearing a dielectric mirror layer to an electro-optic sensor material (liquid crystal, i.e., PDLC) using an adhesive layer, such that the dielectric mirror layer is substantially optically smooth against the sensor material, as taught by Bryan (Figure 1; column 3, lines 40-46; column 4, lines 54-68; column 9, lines 17-22). Before applying the pellicle to the adhesive layer, the adhesive layer is applied to the sensor material after the sensor material is applied to an electrode that is already applied to the top surface of a glass substrate (column 3, lines 54-68; column 7, line 60 - column 9, line 22). Bryan teaches the pellicle providing support for the dielectric mirror layer and protection for the electro-optic sensor material (column 4, lines 36-38).

Henley states that the dielectric mirror layer is "formed or *bonded*" on the electro-optic sensor material (column 4, lines 15-16). One having ordinary skill in the art would readily appreciate that Henley purposely uses the terms "form" and "bond" to distinguish between a dielectric mirror layer that is directly deposited, or formed, on the sensor material and a dielectric mirror layer that is pre-formed and then applied, or bonded, on the sensor material. Therefore, when bonding the dielectric mirror layer of Henley to the sensor material, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a pellicle as a film bearing the dielectric mirror layer of Henley and to apply the pellicle to an adhesive layer that was previously applied to the sensor material of Henley, such that the dielectric mirror layer is substantially optically smooth against the sensor material, because such is known in the art, as

Art Unit: 1733

taught by Bryan, where the pellicle provides support for the dielectric mirror layer and protection for the electro-optic sensor material.

Regarding claim 2, Henley teaches such (column 4, lines 19-23).

5. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henley, the collective teachings of Konuma, Knoesen and Takizawa, and also Bryan as applied to claim 1 above, and further in view of Holman et al. (US 6831769, of record).

Regarding claim 3, it is known in electro-optical device art to vacuum laminate a film bearing other layers to an electro-optic material (liquid crystal, i.e., PDLC), that was previously coated onto an electrode, using an adhesive layer that was previously applied to the electro-optic material, because laminating in a vacuum expels air from between the layers thus avoiding unwanted air bubbles in the device, as taught by Holman (column 4, lines 1-31; column 3, lines 5-36 and 64-68). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to vacuum laminate the pellicle of Henley in view of Bryan because such is known in the optical-device art, as taught by Holman, where laminating in a vacuum expels air from between the layers thus avoiding unwanted air bubbles in the device.

Regarding claims 4-5, selection of a particular vacuum magnitude would have been within purview of the skilled artisan.

6. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henley, the collective teachings of Konuma, Knoesen and Takizawa, Bryan, and Holman as applied to claim 3 above, and further in view of Nakamura et al. (US 6346164, of record).

Regarding claims 6-7, it would have been obvious to one of ordinary skill to have the pellicle progressively engage the adhesive layer during the vacuum laminating step such that the

Art Unit: 1733

pellicle and adhesive are disposed at an angle relative to each other because it is known to dispose two layers at an angle relative to each other when vacuum laminating the same, as taught by Nakamura (Figure 2; column 2, lines 30-45), wherein such disposition aids in the removal of air from between the layers.

Regarding claim 8, selection of a particular vacuum magnitude would have been within purview of the skilled artisan.

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 of U.S. Patent No. 7,099,067 in view of Henley, further in view of the collective teachings of Konuma et al., Knoesen et al. and Takizawa et al., and further in view of Bryan.

Art Unit: 1733

The claims of the '067 Patent teach all the limitations except the block substrate being glass and coating the top surface of the block substrate with a transparent electrode before coating the PDLC. It is noted that the '067 disclosure teaches the block substrate being glass and coating the top surface of the block substrate with a transparent electrode before coating the PDLC (Figures 1A and 2; column 2, lines 48-49). However, it would have been obvious to use a glass substrate for the block substrate and to provide a transparent electrode on the top surface of the glass substrate, between the glass substrate and PDLC, because such is known in the electro-optical device/sensor art, as taught by Henley. Furthermore, it would have been obvious to coat the transparent electrode on the top surface of the glass substrate before coating the PDLC because such is known in the electro-optical device art, as taught by the collective teachings of Konuma, Knoesen and Takizawa.

If it is not taken that the claims of the '067 Patent are directed to an electro-optical sensor, it is noted that the disclosure teaches such (column 1, lines 30-31). However, it would have been obvious to use the modulator as a sensor because such is known in the art, as taught by Henley and/or Bryan (column 3, lines 40-46).

### ***Response to Arguments***

9. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica L. Ward whose telephone number is 571-272-1223. The examiner can normally be reached on Mon-Fri between 9AM and 6:30PM.



Art Unit: 1733

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jessica L. Ward  
Primary Examiner  
Art Unit 1733

